

## A revision of the Japanese genera and species of the subfamily Hadrotarsinae (Araneae: Theridiidae)

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**Abstract** — Japanese genera and species of the subfamily Hadrotarsinae Thorell 1881 (Araneae: Theridiidae) are revised. The presence of specialized ventral setae of first tarsi, two pairs of seminal receptacles and a dorso-ventrally flattened craw of female palpus characterize Hadrotarsinae. A key to the genera of Hadrotarsinae is given.

Nineteen species belonging to six genera of Hadrotarsinae are recorded from Japan. A new genus, *Yaginumena*, is described. Two genera, *Trigonobothrys* Simon 1889 and *Emertonella* Bryant 1949, are resurrected, and a genus, *Lasaeola* Simon 1881, is recorded from Japan for the first time. Twelve species are newly transferred from *Dipoena* Thorell 1869 to those genera: *Yaginumena castrata* (Bösenberg & Strand 1906), *Y. mutilata* (Bösenberg & Strand 1906), *Y. maculosa* (Yoshida & Ono 2000), *Lasaeola okinawana* (Yoshida & Ono 2000), *L. yoshidai* (Ono 1991), *L. yona* (Yoshida & Ono 2000), *Trigonobothrys japonicus* (Yoshida 1985), *T. amamiensis* (Yoshida 1985), *T. martinae* (Roberts 1983), *T. flavomarginatus* (Bösenberg & Strand 1906), *T. mustelinus* (Simon 1889) and *T. nigromaculatus* (Yoshida 1987); and a species from *Euryopis* Menge 1868: *Emertonella taczanowskii* (Keyserling 1886). A new species, *Dipoena nipponica*, is described from Iriomote Is., the Nansei Islands. A species, *Dipoena immaculata* Zhu 1998 described from China, is newly synonymized with *T. flavomarginatus*, and a genus, *Pselothorax* Chamberlin 1948, with *Lasaeola*.

**Key words** — Hadrotarsinae, Theridiidae, Japan, *Yaginumena*, *Trigonobothrys*, *Emertonella*, revision.

### Introduction

Thorell (1881) had established the spider family Hadrotarsidae, but later Wunderlich (1978) synonymized Hadrotarsidae with Theridiidae. Forster et al. (1990) proposed the subfamily Hadrotarsinae for 11 genera (*Dipoena* Thorell 1869, *Euryopis* Menge 1868, *Anatea* Berland 1927, *Audifia* Keyserling 1884, *Dipoenata* Wunderlich 1988, *Euryopena* Wunderlich 1992, *Gmogola* Keyserling 1889, *Guaraniella* Baert 1984, *Hadrotarsus* Thorell 1881, *Lasaeola* Simon 1881 and *Yoroa* Baert 1984) on the basis of the presence of specialized ventral setae of first tarsi, two pairs of seminal receptacles, a dorso-ventrally flattened craw of female palpus and a series of ridged projections on anterior spinnerets. All the members of Hadrotarsinae may be specialized as predators of ants.

Wunderlich (1988) resurrected the genus *Lasaeola* that had been synonymized with *Dipoena*. *Lasaeola prona* (Menge 1868), which occurs also in Japan (Yoshida & Ono 2000) is the type species of this genus. In this paper, I resurrect two genera, *Trigonobothrys* Simon 1889 and *Emertonella* Bryant 1949, that have been synonymized each with *Dipoena* and *Euryopis*. In addition to them, a new genus, *Yaginumena*, is described. Thus, the subfamily Hadrotarsinae consists of a total of 14 genera.

In Japan, only two genera, *Dipoena* and *Euryopis*, have been used under the subfamily Hadrotarsinae (Tanikawa 2000). Fourteen species belonging to four species groups (*sulfurica*, *prona*, *lineatipes* and *nigra*-groups) have been recorded from Japan in the genus *Dipoena* s. lat. (Yoshida & Ono 2000). In this paper, I treated one species of the *sulfurica* group as the genus *Dipoena* s. str., four of the *prona* (*hamata*) group as *Lasaeola*, six of the *lineatipes* group as *Trigonobothrys*, and three of the *nigra* group as *Yaginumena* new genus. In addition to them, a new species of *Dipoena* is described from Iriomote Is., the Nansei Islands. On the other hand, in the genus *Euryopis* s. lat. five species are known from Japan (Yaginuma 1986; Yoshida 1992, 1997, 2000). One of them is newly transferred to *Emertonella* and three of them belong to *Euryopis* s. str. Remaining one, *Euryopis iharai* Yoshida 1992, is excluded in this paper, because systematic position of it is uncertain. In summary, a total of 19 species belonging to six genera are recorded from Japan under the subfamily Hadrotarsinae.

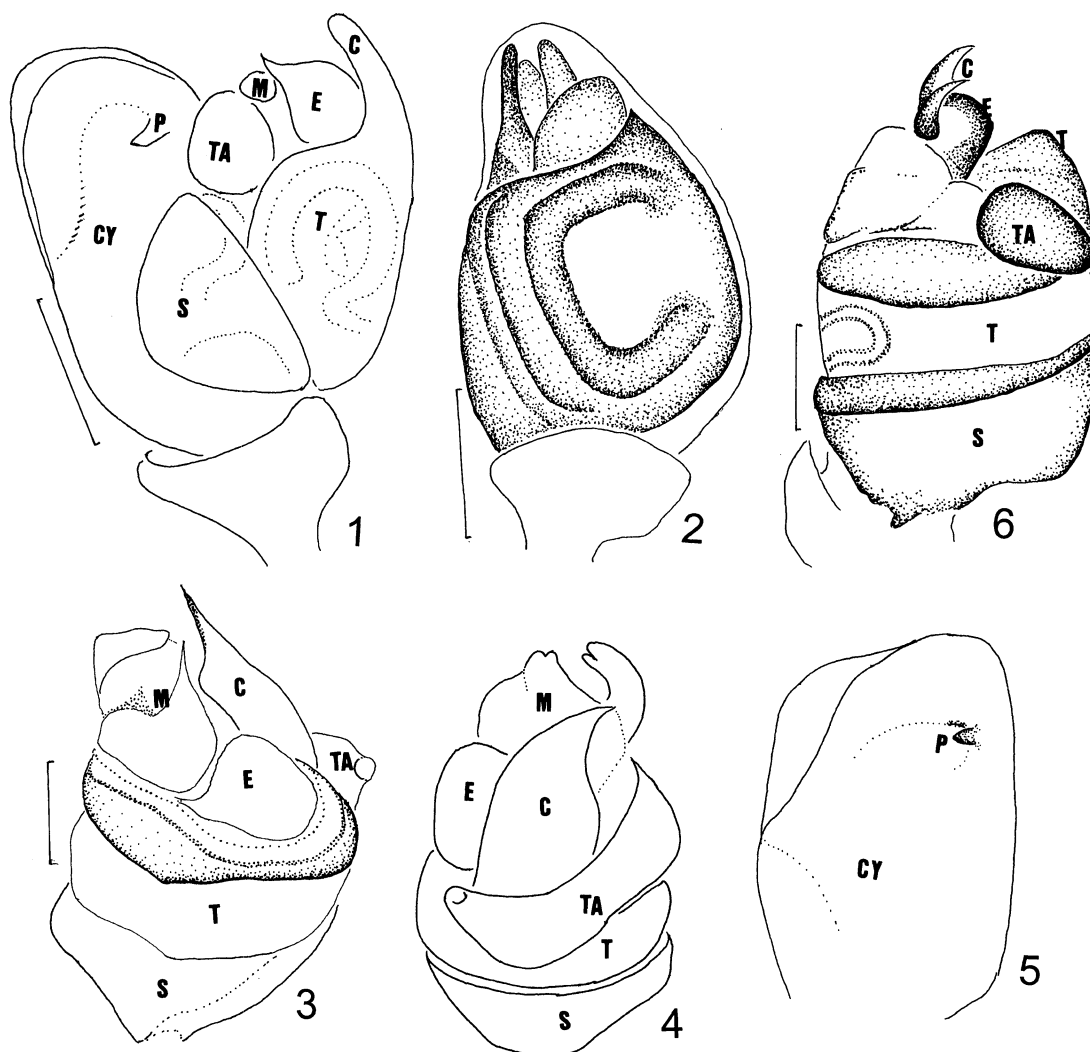
Specimens used in this paper are the same as those of “additional record(s)” and “specimens examined” listed by Yoshida & Ono (2000) and Yoshida (1992, 1997, 2000). Prefectural names are capitalized in the list of “additional record(s)”. Depositories of specimens excluding my private collection are given in abbreviations: ASJ, Arachnological

Society of Japan, Otemon Gakuin University, Osaka; BMNH, Museum of Natural History, London, England; CMM, private collection of Mayumi Matsuda, Hokkaido; HEC, Hebei Educational College, Shijiazhuang, China; HUW, Laboratory of Pest Natural Enemies, Department of Biology, Hubei University, Wuhan, China; IRRI, International Rice Research Institution, Manila, the Philippines; KUT, Kyungpook University, Taegu, Korea; MCZ, Museum of Comparative Zoology, Massachusetts, USA; NHMS, Natural History Museum, Stockholm, Sweden; NSMT, National Science Museum, Tokyo; OMNH, Osaka Museum of Natural History, Osaka; PAS, Polish Academy of Science, Warsaw, Poland; SMF, Senckenberg Museum Frankfurt am Main, Germany.

## Taxonomy

Subfamily Hadrotarsinae Thorell 1881  
[Japanese name: Mijingumo aka]

Hadrotarsidae Thorell 1881, p. 190 (established as a family); Simon 1893, p. 305; Petrunkevitch 1928, p. 36; Hickman 1942, p. 148; Baert 1984 a, p. 608; Baert 1984 b, p. 229. Hadrotarsinae: Forster et al. 1990, p. 111. Euryopeae Simon 1894, p. 524 (established as a genus group); Wiehle 1937, p. 131. Diponeae Simon 1894, p. 564 (established as a genus group); Wiehle 1937, p. 180.



**Figs. 1–6.** *Yaginumena mutilata* (Bösenberg & Strand 1906), ♂ from Higashine-shi, Yamagata Pref. (1), *Y. maculosa* (Yoshida & Ono 2000), ♂ from Nagoya-shi, Aichi Pref. (2), *Lasaeola prona* (Menge 1868), ♂ from Osaka-shi, Osaka Pref. (3–5) and *Trigonobothrys amamiensis* (Yoshida 1985), ♂ from Shingu-mura, Ehime Pref. (6), left palpus—1, expanded, prolateral view; 2, ventral view; 3–4, 6, bulb expanded (cymbium excluded), prolateral (3), retrolateral (4) and dorsal (6) view; 5, cymbium, ventral view. Scales: 0.1 mm. Abbreviations: C, conductor; E, embolus; M, median apophysis; T, tegulum; TA, tegular apophysis; S, subtegulum; CY, cymbium; P, paracymbium.

*Diagnosis.* This subfamily is easily distinguished from the other subfamilies of Theridiidae by having specialized ventral setae of first tarsi, two pairs of seminal receptacles and a dorso-ventrally flattened claw of female palpus.

*Notes.* Fourteen genera of the family Theridiidae belong to this subfamily. Six of them, *Dipoena* Thorell 1869, *Yaginuma* new genus, *Lasaeola* Simon 1881, *Trigonobothrys* Simon 1889, *Euryopis* Menge 1868 and *Emertonella* Bryant 1949, are confirmed in Japan. This subfamily can be treated as a family, but I follow Forster et al. (1990) in this paper.

*Type genus.* *Hadrotarsus* Thorell 1881.

Key to the Japanese genera of the subfamily Hadrotarsinae

1. Colulus small with two setae; male carapace high, with various cervical grooves .....2
- Colulus absent; male carapace not so high, without distinct cervical grooves.....5
2. Abdomen with distinct black and white flecks .....  
.....*Dipoena* Thorell 1869
- Abdomen without distinct black and white flecks ...3
3. Male carapace with high head region, without large cervical grooves; conductor conjugated with tegulum .....  
.....*Yaginuma* new genus
- Male carapace cylindrical and high, with various cervical grooves; conductor separated from tegulum .....4
4. Cylinder of male carapace not so large; tegular apophysis, conductor and embolus larger and relatively complex; median apophysis present .....  
.....*Lasaeola* Simon 1881
- Cylinder of male carapace large and high; tegular apophysis, conductor and embolus small and simple; median apophysis absent.....  
.....*Trigonobothrys* Simon 1889
5. Carapace with high head region; abdomen blackish brown with large silver flecks; cymbium of male palpus without projection ...*Emertonella* Bryant 1949
- Carapace without high head region; abdomen blackish brown to black with white or yellow flecks; cymbium of male palpus with a distal projection .....  
.....*Euryopis* Menge 1868

*Dipoena* Thorell 1869 s. str.  
[Japanese name: Mijingumo zoku]

*Dipoena* Thorell 1869, p. 91.

*Dipoena* s. lat.: Simon 1894, p. 567; Wiehle 1937, p. 180; Saito 1941, p. 160; Levi 1953, p. 3; Yaginuma 1960, p. 39; Levi & Levi 1962, p. 40; Levi 1963, p. 136; Yaginuma 1968, p. 34; Yaginuma 1986, p. 42; Wunderlich 1987, p. 210; Zhu 1998, p. 224; Yoshida & Ono 2000, p. 127.

*Diagnosis.* This genus resembles related genera of the subfamily Hadrotarsinae, but is distinguished from *Yaginuma* by having small tegulum of male palpus, and

black and white coloration of abdomen, and from *Lasaeola* and *Trigonobothrys* by having non-cylindrical carapace without various thoracic groove in males. This genus is easily distinguished from *Euryopis* and *Emertonella* by the presence of colulus with two setae. Only the species of *D. sulfurica* group belong to this genus.

*Description.* Superficial appearance is similar to that of other genera of Hadrotarsinae. Carapace oval, head region high (Figs. 8, 15). Abdomen oval with distinct black and white flecks (Figs. 7, 14). Two seminal receptacles connecting with sclerotized duct (Fig. 11). Male palpus with free median apophysis (Figs. 12–13, 18–20).

*Type species.* *Atea melanogaster* C. L. Koch 1837

***Dipoena nipponica* new species**  
[Japanese name: Tanikawa-mijingumo]  
(Figs. 7–13)

*Diagnosis.* This species is easily distinguished from the other species of the genus *Dipoena* by having 1) thin, long and anticlockwise embolus of male palpus (left), 2) thick and long conductor of male palpus, and 3) the duct of female internal genitalia forming a dorsally thick circle.

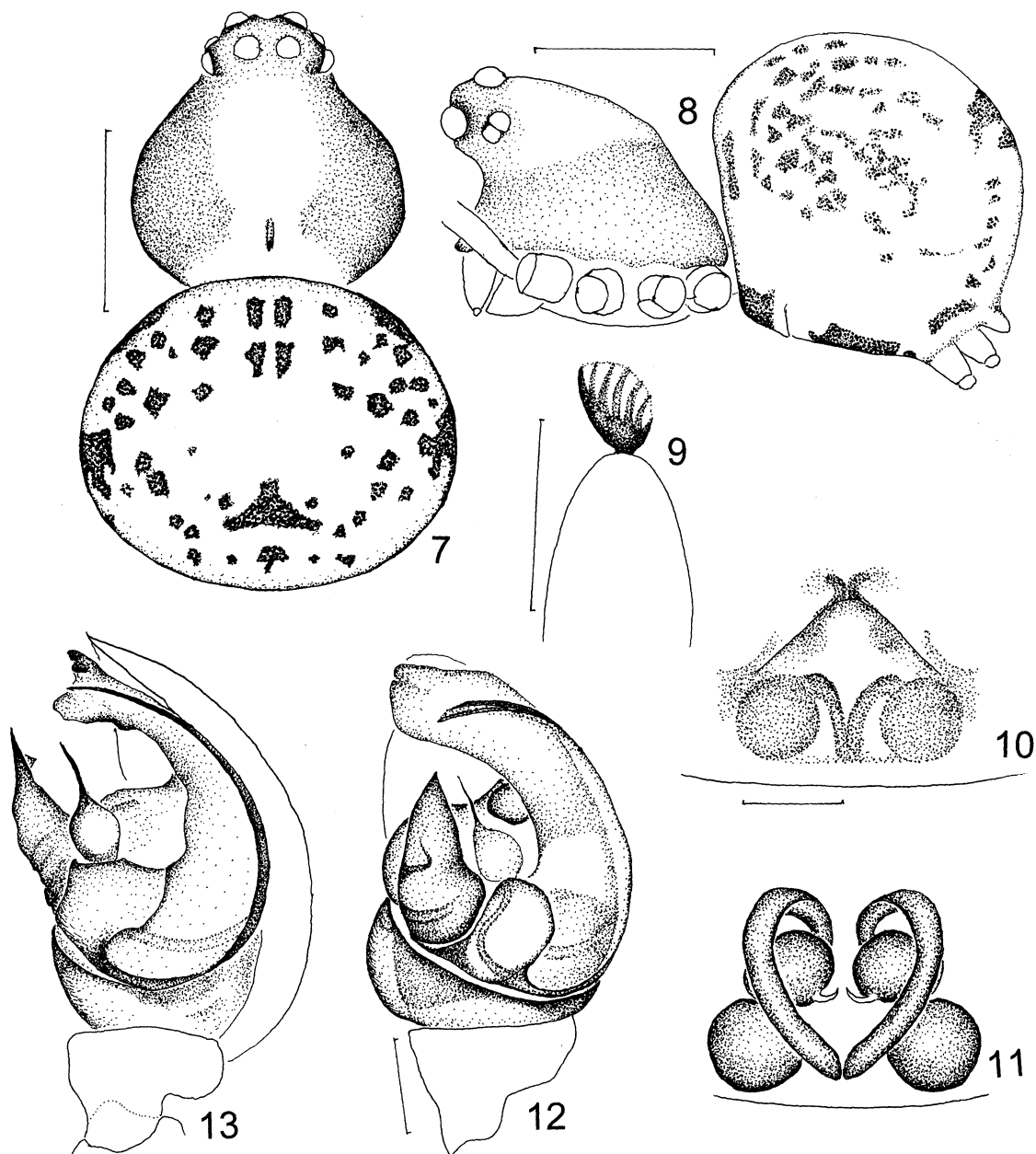
*Description.* Carapace oval, head region projecting; fovea longitudinal (Figs. 7–8). Abdomen globular. Female palpal claw dorso-ventrally flattened (Fig. 9). Anterior median eyes largest.

Female genitalia as shown in Figs. 10–11: epigynum with an antero-median projection; duct thick and long, forming a dorsally large circle; seminal receptacles two pairs.

Male palpus as shown in Figs. 12–13: large concavity present between conductor and tegular apophysis; embolus thin and long, anticlockwise (left palpus); base of embolus with median apophysis; conductor thick and long; tegular apophysis projecting distally.

Coloration. Carapace brown, marginally with dusky wide flecks. Legs and palpi brown with black flecks. Chelicerae, maxillae and labium grayish brown. Abdomen brown with many distinct black flecks and white pigments; venter with large black flecks between spinnerets and epigynum, and anterior part of epigastric furrow.

Measurements (in mm. ♀ allotype/♂ holotype). Body length 1.92/1.71. Carapace length 0.76/0.82; width 0.71/0.71; height 0.76/0.79. Abdomen length 1.13/0.89; width 1.26/1.03; height 1.18/0.92. First leg: femur 0.74/0.79; patella and tibia 0.76/0.87; metatarsus 0.45/0.50; tarsus 0.32/0.34. Second patella and tibia 0.66/0.74; third patella and tibia 0.55/0.53; fourth patella and tibia 0.71/0.71. Diameters: anterior median eye 0.12/0.12; anterior lateral eye 0.05/0.05; posterior median eye 0.09/0.08; posterior lateral eye 0.08/0.08. Distances: between anterior median eyes 0.07/0.08; between anterior median and lateral eyes 0.03/0.03; between posterior median eyes 0.04/0.05; between posterior median and lateral eyes 0.08/0.08. Median ocular area, anterior width 0.28/0.29; posterior width 0.22/0.22; length 0.22/0.22.



**Figs. 7–13.** *Dipoenia nipponica* new species, ♀ allotype and ♂ holotype—7, male carapace and abdomen, dorsal view; 8, male, lateral view; 9, claw of female left palpus, dorsal view; 10, epigynum, ventral view; 11, female internal genitalia, dorsal view; 12–13, male left palpus, ventral (12) and retrolateral (13) view. Scales: 0.5 mm (7–8) and 0.1 mm (9–13).

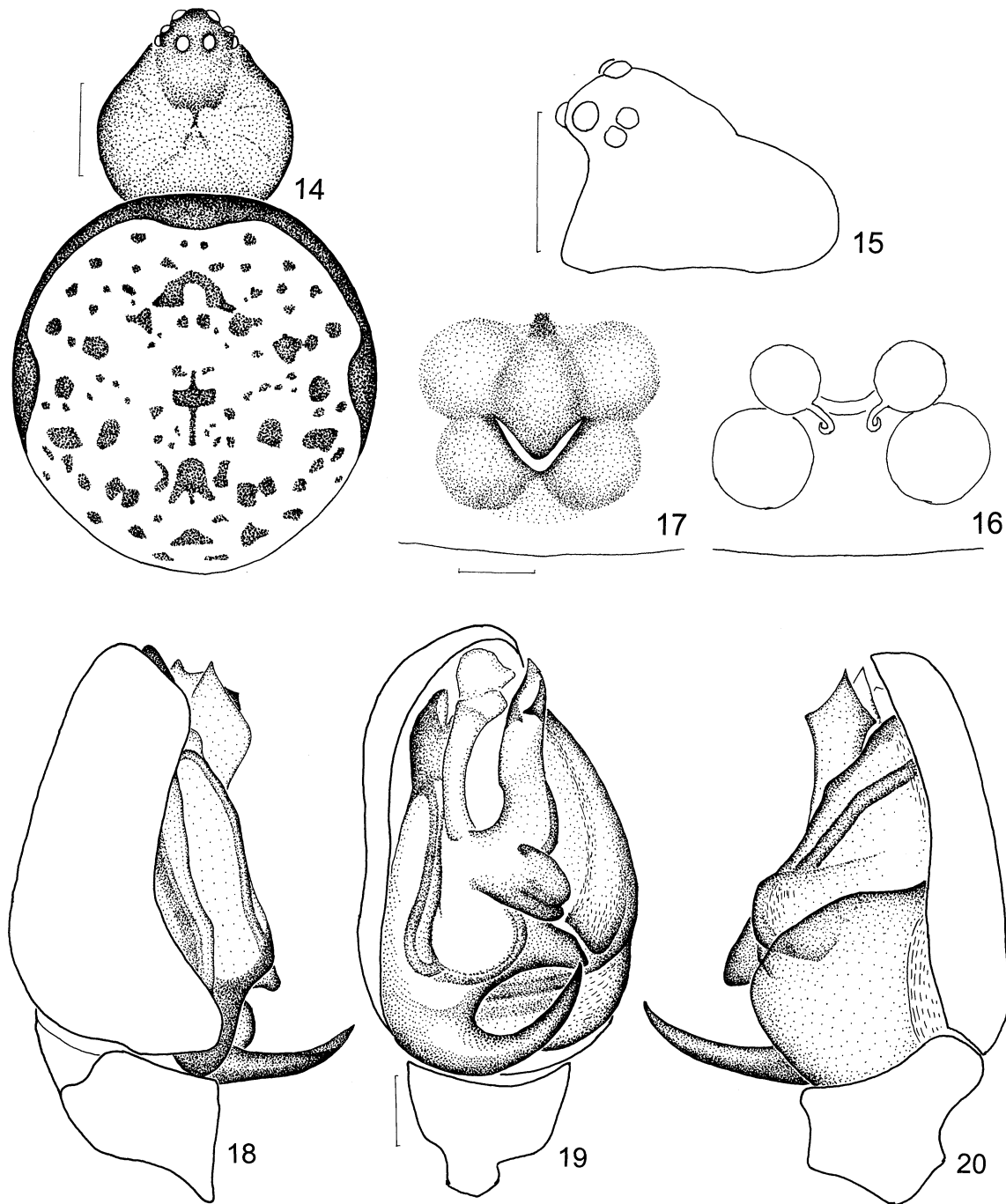
**Variation.** Body length, 1.8–1.9 mm in female, 1.6–1.7 mm in male.

**Type series.** Holotype: ♂, Sonai, 11-VIII-1985 (NSMT-Ar 5190). Allotype: ♀, Komi, 6-VIII-1987, (NSMT-Ar 5191). Paratypes: 1♂, 5-I-1992, 1♀, 14-VIII-1992, Sonai, (NSMT-Ar 5192–5193); 1♀, Shirahama, 25-VIII-1988, (NSMT-Ar 5194); 1♂, Funaura, 3-I-1986, (NSMT-Ar 5195). All collected by A. Tanikawa on Iriomote Is., Okinawa Pref., Japan.

**Distribution.** Japan: Iriomote Is. of the Yaeyama Islands (southernmost islands of the Nansei Islands).

*Dipoenia punctisparsa* Yaginuma 1967  
[Japanese name: Shimofuri-mijingumo]  
(Figs. 14–20)

*Dipoenia punctisparsa* Yaginuma 1967, p. 97, fig. 3f–h (holotype: ♀ from Nijima Island, the Izu Islands, Tokyo Prefecture, Japan, 2-VI-1967, M. Ohno leg., in ASJ; examined)—Yaginuma 1968, p. 129, text-fig. 107; Yaginuma 1986, p. 42, text-fig. 23–4; Chikuni 1989, p. 36, fig. 31; Yoshida & Ono 2000, p. 149.



**Figs. 14–20.** *Dipoena punctisparsa* Yaginuma 1967, ♀♂ from Yokosuka-shi, Kanagawa Pref.—14, female carapace and abdomen, dorsal view; 15, male carapace, lateral view; 16, epigynum, ventral view; 17, female internal genitalia, dorsal view; 18–20, male left palpus, prolateral (18), ventral (19) and retrolateral (20) view. Scales: 0.5 mm (14–15) and 0.1 mm (16–20).

*Additional record.* HOKKAIDO: 2♀, Mt. Esashigyu, (Figs. 18–20).  
Kamikawa-cho, 1–VIII-1984, N. Yasuda leg.

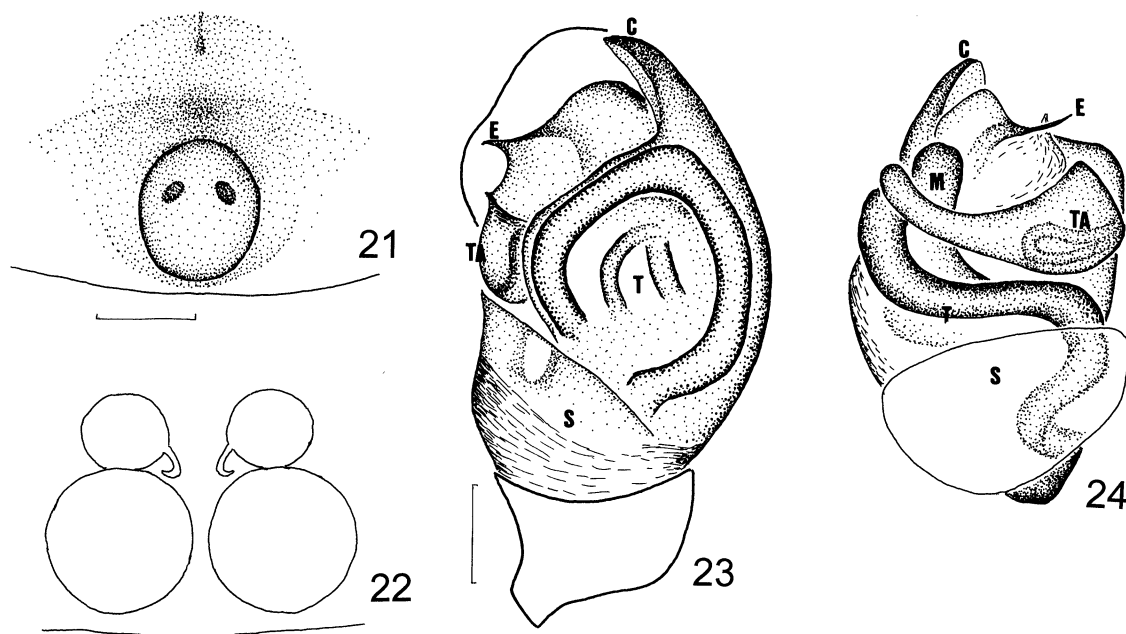
*Distribution.* Japan: Hokkaido, Honshu and Kyushu.  
Korea.

*Notes.* Epigynum with V-shaped depression (Fig. 16);  
seminal receptacles two pairs and circular (Fig. 17).  
Tegulum of male palpus ventrally with a large projection

***Yaginumena* new genus**

[Japanese name: Yaginuma-mijingumo zoku]

*Diagnosis.* This genus resembles *Dipoena*, but is distinguished from the latter by having dark abdomen, large



**Figs. 21–24.** *Yaginumena castrata* (Bösenberg & Strand 1906), ♀♂ from Mogami-machi, Yamagata Pref.—21, epigynum, ventral view; 22, female internal genitalia, dorsal view; 23–24, male left palpus, ventral (23) and dorsal (24, expanded and cymbium excluded) view. Scales: 0.1 mm. Abbreviations: C, conductor; E, embolus; M, median apophysis; T, tegulum; TA, tegular apophysis; S, subtegulum.

tegulum and small embolus of male palpus, and large sclerotized plate of epigynum.

**Description.** Carapace oval with high head region without distinct fovea. Abdomen oval and usually dark color without distinct light flecks. Epigynum with a sclerotized oval plate that has two openings (Figs. 21–22). Tegulum of male palpus large with a thick and long internal duct; tegular apophysis, median apophysis, embolus and conductor small; conductor conjugated with tegulum (Figs. 1–2, 23–24).

**Notes.** All the species of the *D. nigra* group designated by Levi (1953) belong to this genus.

**Etymology.** The generic name is dedicated to the late Dr. Takeo Yaginuma, Osaka, and is a feminine in gender.

**Type species.** *Dipoena castrata* Bösenberg & Strand 1906.

*Yaginumena castrata* (Bösenberg & Strand 1906)

**new combination**

[Japanese name: Bokashi-mijingumo]

(Figs. 21–24)

*Dipoena castrata* Bösenberg & Strand 1906, p. 149, pl. 5, fig. 50, pl. 12, figs. 246–247 (syntypes: 1♀ and 4 juveniles from Saga, Japan, the middle of June, W. Dönitz leg., SMF 3069; not examined)—Saito 1941, p. 161, fig. 182; Yaginuma 1960, p. 39, pl. 11, fig. 67, text-fig. 39; Yaginuma 1968, p. 39, pl. 11, fig. 67, text-fig. 39; Yaginuma 1986, p. 42, pl. 10, fig. 1, text-fig. 23-1; Chikuni 1989, p. 36, fig. 30; Zhu 1998, p. 248, fig. 164; Song et al. 1999, p. 110, fig. 53 I–J, N–O; Yoshida

& Ono 2000, p. 143, figs. 31–32.

*Dipoena unifirma* Bösenberg & Strand 1906, p. 151, pl. 12, fig. 285 (syntypes: 1♂ and 1 juvenile from Kompira, Saga, Japan, W. Dönitz leg., SMF 3075; not examined)—Saito 1941, p. 163, fig. 186.

**Distribution.** Japan: Hokkaido, Honshu, Shikoku and Kyushu. Korea and China.

*Yaginumena mutilata* (Bösenberg & Strand 1906)

**new combination**

[Japanese name: Ko-akakuro-mijingumo]

(Fig. 1)

*Dipoena mutilata* Bösenberg & Strand 1906, p. 150, pl. 12, fig. 275 (holotype: ♀ from Japan, W. Dönitz leg., SMF 3073; examined)—Saito 1941, p. 163, fig. 185; Yoshida & Ono 2000, p. 139, figs. 21–30.

*Dipoena longisternum* Bösenberg & Strand 1906, p. 152, pl. 10, fig. 189 (holotype: ♀ from Kompira, Saga, Japan, W. Dönitz leg., SMF 3005; examined)—Saito 1941, p. 162, fig. 184.

**Additional record.** HOKKAIDO: 1♀, Okushiri Is., 28–VII-1964, M. Ohno leg. (OMNH).

**Distribution.** Japan: Hokkaido, Honshu and Kyushu. Korea.

*Yaginumena maculosa* (Yoshida & Ono 2000)**new combination**

[Japanese name: Madara-mijingumo]

(Fig. 2)

*Dipoena maculosa* Yoshida & Ono 2000, p. 147, figs. 37–39 (holotype: ♂ from Numa, Tamano-shi, Okayama Prefecture, Japan, 1-VII-1997, K. Nojima leg., NSMT-Ar 4506; examined).

*Additional record.* AICHI: 1♂, Otaka-ryokuchi Park, Midori-ku, Nagoya-shi, 27-V-2001, K. Ogata leg.

*Distribution.* Japan: Honshu (Aichi and Okayama Prefectures).

*Notes.* Male palpus of the holotype is expanded (Yoshida & Ono 2000, figs. 38–39), but that of a specimen collected from Nagoya-shi, Aichi Pref., is not expanded (Fig. 2).

*Lasaeola* Simon 1881

[Japanese name: Aichi-mijingumo zoku]

*Pachydactylus* Menge 1868, p. 176 (homonym of *Pachydactylus* Wiegmann 1834).

*Lasaeola* Simon 1881, p. 136; Wunderlich 1988, p. 148.

*Pselothorax* Chamberlin 1948, p. 541. **New Synonymy**

*Diagnosis.* This genus is similar to *Dipoena*, *Yaginumena* and *Trigonobothrys* in general appearance, but is distinguished from *Dipoena* by high male carapace and dusky coloration of abdomen, from *Yaginumena* by high male carapace and large conductor and embolus, and from *Trigonobothrys* by the presence of median apophysis, and complicated and projecting tegular apophysis of male palpus.

*Description.* Carapace oval with head region high, sometimes cylindrical and specialized in male. Eyes almost equal. Tegular apophysis of male palpus complicated and projecting; tegulum relatively small; embolus and conductor large; paracymbium hooked (Figs. 3–5). Epigynum with a distinct depression.

*Notes.* This genus had been synonymized with *Dipoena*, but Wunderlich (1988) resurrected it as an independent genus. Ivie (1967) synonymized *Pselothorax* Chamberlin 1948 (type species from North America) with *Dipoena*, but I newly synonymize it with this genus. All the species of the *D. prona* group designated by Levi (1953) belong to this genus.

*Type species.* *Pachydactylus ponus* Menge 1868.

*Lasaeola prona* (Menge 1868)

[Japanese name: Aichi-mijingumo]

(Figs. 3–5)

*Pachydactylus ponus* Menge 1868, p. 177 (holotype: ♀ from Weichselmünde forest near Gdańsk, Poland; not examined).

*Lasaeola prona*: Simon 1881, p. 145.

*Dipoena prona*: Wiehle 1937, p. 186, figs. 184–185; Levi 1963, p. 145; Roberts 1985, p. 176, pl. 105 b, text-fig. 78b; Yoshida & Ono 2000, p. 149, figs. 40–47.

*Dipoena hamata* Tullgren 1949, p. 50, figs. 10–11 (holotype: ♂ from St. Kalsö, Sweden, in NHMS; not examined)—Levi 1953, p. 30, figs. 50–59, 105–106.

*Additional record.* OSAKA: 2♀1♂, riverside of Yodogawa, Toyosato, Higashi-yodogawa-ku, Osaka-shi, 13-VII-2000, K. Nojima leg.

*Distribution.* Japan: Honshu (Aichi and Osaka Prefectures). Europe and North America.

*Notes.* Though *Theridion triste* Hahn 1833 is recorded as the type species of this genus by Platnick (2001), this species is the type species of *Pachydactylus* Menge 1868.

*Lasaeola okinawana* (Yoshida & Ono 2000)**new combination**

[Japanese name: Okinawa-mijingumo]

*Dipoena amamiensis* (in part): Yoshida 1991, p. 35, figs. 5–6; Zhu 1998, p. 242, fig. 159-B, E.

*Dipoena okinawana* Yoshida & Ono 2000, p. 146, figs. 33–36 (holotype: ♂ from Mt. Banna-dake, Ishigaki-jima Island, Okinawa Prefecture, Japan, 11-VII-1976, H. Yoshida leg., NSMT-Ar 4504; examined).

*Distribution.* Japan: Nansei Islands (Okinawa and Ishigaki Islands).

*Notes.* Yoshida & Ono (2000) made this species belong to the *D. nigra* group (in this paper, the genus *Yaginumena*). However, I consider this species should be treated under *Lasaeola* on the basis of the characteristics of male palpus.

*Lasaeola yoshidai* (Ono 1991) **new combination**

[Japanese name: Yoshida-mijingumo]

*Dipoena yoshidai* Ono, in Ono et al. 1991, p. 91, figs. 2–8 (holotype: ♂ from Koetoi, 20 m alt., Wakkanai-shi, Hokkaido, Japan, 10-VII-1990, H. Ono leg., NSMT-Ar 2098; examined)—Yoshida & Ono 2000, p. 152, figs. 48–53.

*Distribution.* Japan: Hokkaido and Honshu.

*Lasaeola yona* (Yoshida & Ono 2000) **new combination**

[Japanese name: Yona-mijingumo]

*Dipoena yona* Yoshida & Ono 2000, p. 153, figs. 54–56 (holotype: ♂ from Experiment Forest of the University of the Ryukyus, Yona, Okinawa-jima Island, Okinawa Prefecture, Japan, 28-III-1997, A. Tanikawa leg., NSMT-Ar 4509; examined).

*Distribution.* Japan: Nansei Islands (Okinawa Is.).

*Trigonobothrys* Simon 1889  
[Japanese name: Tsutsu-mijingumo zoku]

*Trigonobothrys* Simon 1889a, p. 230.

**Diagnosis.** This genus resembles *Lasaeola*, but is distinguishable from it by having male palpus with small embolus and conductor and without median apophysis, and epigynum with a small scapus.

**Description.** Carapace oval with high head region in female, wholly high and cylindrical with a wide and deep cervical groove (Fig. 25). Abdomen usually sclerotized in both sexes, with a dorsal scutum in male. Epigynum with a small scapus (Figs. 26–27). Embolus and conductor of male palpus small; median apophysis absent (Figs. 6, 28).

**Notes.** This genus has been synonymized with *Dipoena*, but I resurrect it as a distinct genus. All the species of the *D. lineatipes* group designated by Levi (1953) belong to this genus.

**Type species.** *Trigonobothrys excisus* Simon 1889.

*Trigonobothrys japonicus* (Yoshida 1985)  
**new combination**  
[Japanese name: Yamato-mijingumo]

*Pholcomma japonicum* Yoshida 1985, p. 10, figs. 3, 8–11 (holotype: ♀ from Keishin-no-taki, the foot of Mt. Nishikoma-dake, Nagano Prefecture, Japan, 9-VIII-1974, Y. Chikuni leg., in ASJ; examined)—Chikuni 1989, p. 31, fig. 9.

*Dipoena japonica* (in part): Yoshida 1991, p. 33.

*Dipoena japonica*: Yoshida & Ono 2000, p. 128, figs. 1–6.

*Dipoena kayaensis* Paik 1996, p. 42, figs. 1–14 (holotype: ♂ from Mt. Kayasan, Heinsan, Korea, 10-VII-1974, K. Y. Paik leg., in KUT; not examined).

**Additional record.** MIE: 1♂, Kiho-cho, 22-V-1971, K. Kaihotsu leg. (OMNH).

**Distribution.** Japan: Honshu (Nagano, Aichi, Mie and Okayama Prefectures). Korea.

*Trigonobothrys amamiensis* (Yoshida 1985)  
**new combination**  
[Japanese name: Amami-mijingumo]  
(Fig. 6)

*Pholcomma amamiense* Yoshida 1985, p. 11, figs. 4–5, 11–12 (holotype: ♀ from Naze, Amami-oshima Island, Kagoshima Prefecture, Japan, 27-III-1978, H. Yoshida leg., in ASJ; examined).

*Dipoena japonica* (in part): Yoshida 1991, p. 33, figs. 1, 3–4.

*Dipoena amamiensis* (in part): Yoshida 1991, p. 35.

*Dipoena amamiensis*: Paik 1995 b, p. 33, figs. 7–12; Yoshida & Ono 2000, p. 130, figs. 7–10.

**Distribution.** Japan: Honshu (Tokyo, Shizuoka, Aichi,

Osaka, Okayama and Hiroshima Prefectures), Shikoku (Ehime Pref.) and the Nansei Islands (Amami-oshima Is.). Korea and China.

*Trigonobothrys martinae* (Roberts 1983)  
**new combination**  
[Japanese name: Hoshi-mijingumo]

*Dipoena martinae* Roberts 1983, p. 227, figs. 32–35 (holotype: ♂ from Grande Terre, Wilson's Well, Aldabra, western Indian Ocean, 9-III-1974, in BMNH; not examined)—Zhu 1998, p. 236, fig. 154; Song et al. 1999, p. 112, fig. 55C-D, K-L; Yoshida & Ono 2000, p. 132, figs. 11–16.

*Dipoena japonica* (in part): Yoshida 1991, p. 10, fig. 2.

*Dipoena decamaculata* Chen et al. 1992, p. 270, figs. 1–5 (holotype: ♂ from Xiushui County, Jiangxi Province, China, 10-IX-1991, in HUW; not examined).

*Dipoena coreana* Paik 1995b, p. 32, figs. 1–6 (holotype: ♂ from Jinjoo, Kyungnam, Korea, 13-VIII-1981, B. K. Seo leg., in KUT; not examined).

*Dipoena ruedai* Barrion & Litsinger 1995, p. 454, fig. 274 (holotype: ♂ from Magasaysay Village, Siniloan, Laguna Province, Luzon Island, Philippines, 12-XII-1984, A.T. Barrion leg., in IRRI; not examined).

**Distribution.** Japan: Nansei Islands (Iriomote Is.). Korea, China, the Philippines and the Aldabra Islands (West Indian Sea).

*Trigonobothrys flavomarginatus*  
(Bösenberg & Strand 1906) **new combination**  
[Japanese name: Kiberi-mijingumo]  
(Figs. 25–28)

*Dipoena flavomarginata* Bösenberg & Strand 1906 p. 151, pl. 12, fig. 297 (syntypes: ♀♂ from Saga, Japan, in SMF; not examined)—Saito 1941, p. 162, fig. 183; Ohno & Yaginuma 1968, p. 27, fig. 2; Yaginuma 1986, p. 42, pl. 10, fig. 23–2, text-fig. 23–2; Chikuni 1989, p. 36, fig. 33; Zhu 1998, p. 231, fig. 150; Song et al. 1999, p. 110, fig. 53K-L, P; Yoshida & Ono 2000, p. 136, figs. 18–20.

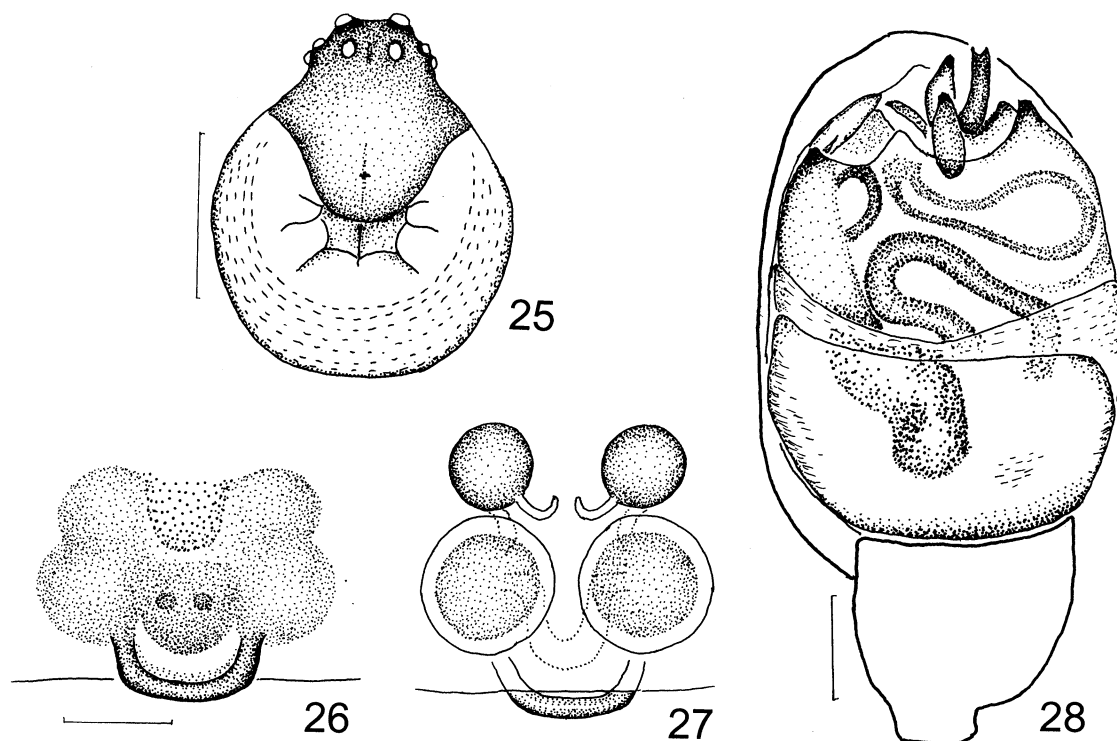
*Dipoena immaculata* Zhu 1998, p. 251, fig. 167 (holotype: ♂ from Xuanen County, Hubei Province, China, 26-V-1989, M. Zhu leg., in HEC; not examined). **New synonymy.**

**Distribution.** Japan: Honshu, Shikoku and Kyushu. China.

**Notes.** I newly synonymize *Dipoena immaculata* Zhu 1998 described from China with *T. flavomarginatus* (Bösenberg & Strand 1906) described from Japan, because figures of *D. immaculata* coincide with those of *T. flavomarginatus* (Figs. 25–28).

*Trigonobothrys mustelinus* (Simon 1889)  
**new combination**  
[Japanese name: Kani-mijingumo]





**Figs. 25–28.** *Trigonobothrys flavomarginatus* (Bösenberg & Strand 1906), ♀♂ from Yamagata-shi, Yamagata Pref.—25, male carapace, dorsal view; 26, epigynum, ventral view; 27, female internal genitalia, dorsal view; 28, male left palpus, ventral view. Scales: 0.5 mm (25) and 0.1 mm (26–28).

*Euryopis mustelina* Simon 1889b, p. 251 (holotype: ♀ from Yokohama, Japan, A. Mellottée leg., in MNHN; not examined)—Bösenberg & Strand 1906, p. 137, pl. 5, fig. 2, pl. 12, fig. 276; Saito 1941, p. 177, fig. 302; Yaginuma 1960, p. 34, pl. 7, fig. 42.

*Dipoena mustelina*: Yaginuma 1967, p. 88, fig. 1a-c; Yaginuma 1968, p. 34, pl. 7, fig. 42; Yaginuma 1986, p. 42, pl. 10, fig. 3, text-fig. 23-3; Chikuni 1989, p. 36, fig. 32; Zhu 1998, p. 240, fig. 157; Song et al. 1999, p. 112, fig. 55E-F, M; Yoshida & Ono 2000, p. 135, figs. 17.

**Distribution.** Japan: Hokkaido, Honshu, Shikoku, Kyushu and the Nansei Islands. Korea, China and Indonesia.

*Trigonobothrys nigromaculatus* (Yoshida 1987)

**new combination**

[Japanese name: Kurohoshi-mijingumo]

*Pholcomma nigromaculatum* Yoshida 1987, p. 29, figs. 1–4 (holotype: ♀ from Shuishe, Nantow County, Taiwan, 29-III-1979, H. Yoshida leg., NSMT-Ar 1871; examined).

*Dipoena nigromaculata*: Zhu 1998, p. 227, fig. 147; Song et al. 1999, p. 112, fig. 55G-H, N; Yoshida & Ono 2000, p. 134.

**Additional records.** OKAYAMA: 1♀2♂, Kamogawa-cho, 4-V-1997, K. Nojima leg. SHIMANE: 1♀, Iwatsubo, Izumo-shi,

25-VII-2001, Y. Ihara leg.; 1♀, Kumura-Nenbutsuden, Izumo-shi, 27-VII-2001, Y. Ihara leg.

**Distribution.** Japan: Honshu (Okayama and Shimane Prefectures) and the Nansei Islands (Iriomote Is.). China (Taiwan).

*Euryopis* Menge 1868 s. str.

[Japanese name: Hiratahimegumo zoku]

*Euryopis* Menge 1868, p. 174.

*Euryopis* s. lat.: Simon 1894, p. 528; Wiehle 1937, p. 131; Locket & Millidge 1953, p. 44; Levi 1954, p. 3; Saito 1941, p. 177; Archer 1950, p. 13; Yaginuma 1960, p. 34; Levi & Levi 1962, p. 39; Levi 1963, p. 126; Yaginuma 1986, p. 44; Wunderlich 1987, p. 209; Zhu 1998, p. 33.

**Description.** Carapace oval, not so high (Fig. 29). Abdomen flattened and dark color, usually with pale and silver flecks (Fig. 29). Median apophysis of male palpus absent; tegular apophysis attached to tegulum; cymbium with distal projection (Fig. 30). Epigynum usually with a depression. Colulus absent.

**Notes.** *Euryopis iharai* Yoshida 1992 is excluded in this paper, because the characteristics of this species are different from those of this genus. To which genus “*Euryopis*” *iharai* should be designated is uncertain. A generic revision of it will be made elsewhere in the near future.

*Type species. Micryphantes flavomaculata* C. L. Koch 1836.

*Euryopsis flavomaculata* (C. L. Koch 1836)  
[Japanese name: Kimadara-hiratahimegumo]  
(Figs. 29–30)

*Micryphantes flavomaculata* C. L. Koch 1836, p. 67, pl. 95, fig. 220 (holotype: ♀ from Regensburg, Germany; not examined).  
*Euryopsis flavomaculata*: Wiehle 1937, p. 132, figs. 14–19; Locket & Millidge 1953, p. 44, fig. 30; Levi 1954, p. 7, figs. 1, 8–10; Roberts 1985, p. 174, pl. 104, text-fig. 77d; Yaginuma 1986, p. 44; Zhu 1998, p. 39, fig. 18; Song et al. 1999, p. 123, fig. 63E–F.

*Additional records.* HOKKAIDO: 1♂, north shore of Nagafushi Lake, Toyokoro-cho, 27-VI–11-VII-1993, K. Shibata leg. (CMM); 1♂, east shore of Nagafushi Lake, 11–24-VII-1993, K. Shibata leg. (CMM).

*Distribution.* Japan: Hokkaido and Honshu. Europe, Russia and China.

*Euryopsis octomaculata* (Paik 1995)  
[Japanese name: Yahoshi-hiratahimegumo]

*Steatoda octomaculata* Paik 1995 a, p. 7, figs. 8–13 (holotype: ♀ from Nari-dong, Ulleung-do Island, Kyungpook, Korea, 26-VII-1986, J. M. Kang leg., in KUT; not examined).

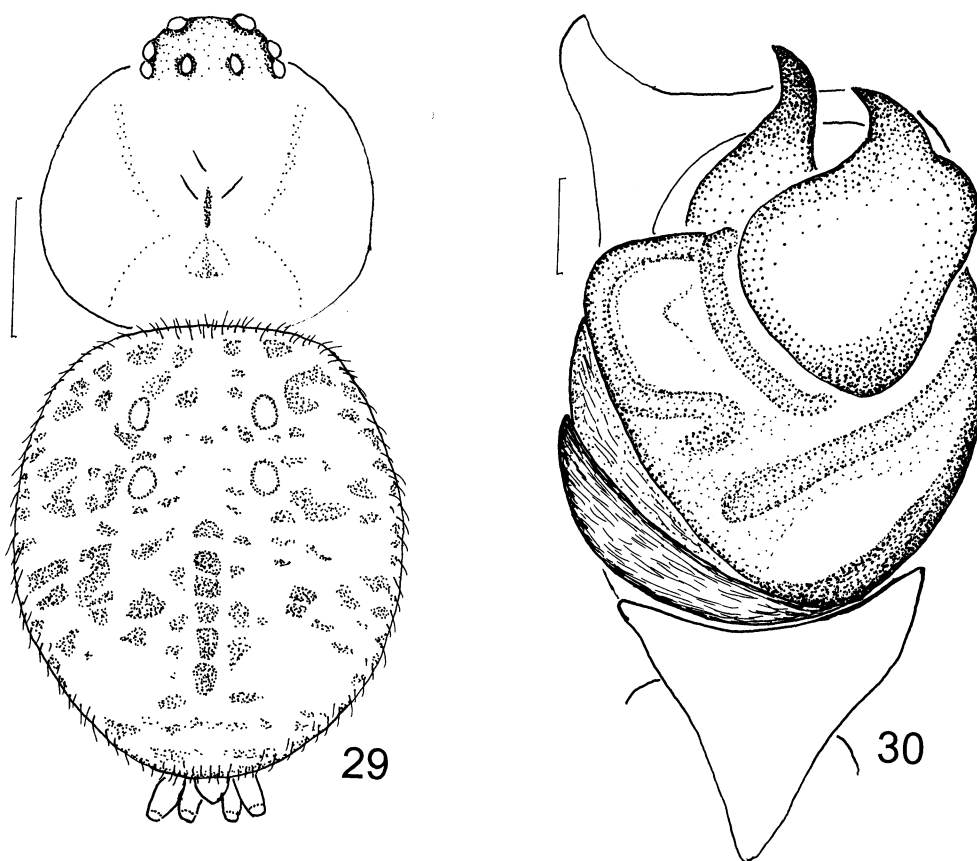
*Euryopsis octomaculata*: Yoshida 1997, p. 111, figs. 1–5.

*Distribution.* Japan: Honshu (Okayama Pref.). Korea (Ulleung-do Is.).

*Euryopsis nigra* Yoshida 2000  
[Japanese name: Kuro-hiratahimegumo]

*Euryopsis nigra* Yoshida 2000, p. 133, figs. 1–5 (holotype: ♂ from Kawabuchi, Shingu Dam, Shingu-mura, Uma-gun, Ehime Prefecture, Japan, 2-VIII-1994, Y. Ihara leg., NSMT-Ar 4520; examined).

*Distribution.* Japan: Honshu (Hiroshima Pref.), Shikoku (Ehime Pref.) and the Nansei Islands (Amami-oshima Is.).



**Figs. 29–30.** *Euryopsis flavomaculata* (C. L. Koch 1836), ♂ from Toyokoro-cho, Hokkaido—29, carapace and abdomen, dorsal view; 30, left palp, ventral view. Scales: 0.5 mm (29) and 0.1 mm (30).

*Emertonella* Bryant 1949

[Japanese name: Shirokane-hiratahimegumo zoku]

*Emertonella* Bryant 1949, p. 182.

**Diagnosis.** This genus resembles *Euryopis*, but is distinguished from it by carapace with high head region and cymbium of male palpus without distal projection.

**Description.** Head region of carapace high (Fig. 31). Abdomen triangular overhanging carapace (Fig. 31). Coloration of abdomen variable, usually black and silver. Epigynum with a large depression; seminal receptacles two pairs (Figs. 32–33). Cymbium of male palpus without projection (Fig. 34). Colulus absent.

**Notes.** Bryant (1949) had established this genus, but Levi (1954) synonymized it with *Euryopis*. *Emertonella* has been treated as the species group of *E. emertoni*, but I resurrect it as a genus in this paper. All the species of the *E. emertoni* group designed by Levi (1954) belong to this genus.

**Type species.** *Euryopis emertoni* Bryant 1933.

*Emertonella taczanowskii* (Keyserling 1886)**new combination**

[Japanese name: Shirokane-hiratahimegumo]

(Figs. 31–34)

*Euryopis taczanowskii* Keyserling 1886, p. 47, pl. 12, fig. 160 (holotype: ♀ from Tumbes, Peru, in PAS; not examined)—Levi 1963, p. 132, fig. 10; Levi 1967, p. 178, figs 37–41; Yoshida 1992, p. 139, figs. 1–4; Zhu 1998, p. 37, fig. 17;

Song et al. 1999, p. 123, fig. 63C-D, G.

*Euryopis nigripes* Banks 1929, p. 86 (holotype: ♀ from Mt. Hope, Panama Canal Zone, in MCZ; not examined)—Levi 1954, p. 24, figs. 38–52.

**Additional records.** OKINAWA: 1♂, Tamagusuku Castle, Okinawa Is., 26-VII-1999, A. Tanikawa leg.; 1♂, 10-VIII-1985, 1♂, 29-VIII-1987, 1♀1♂1 juv., 28-III-1988, 1♂, 15-VIII-1988, 1♂, 29-III-1989, Urauchi, Iriomote Is., A. Tanikawa leg.

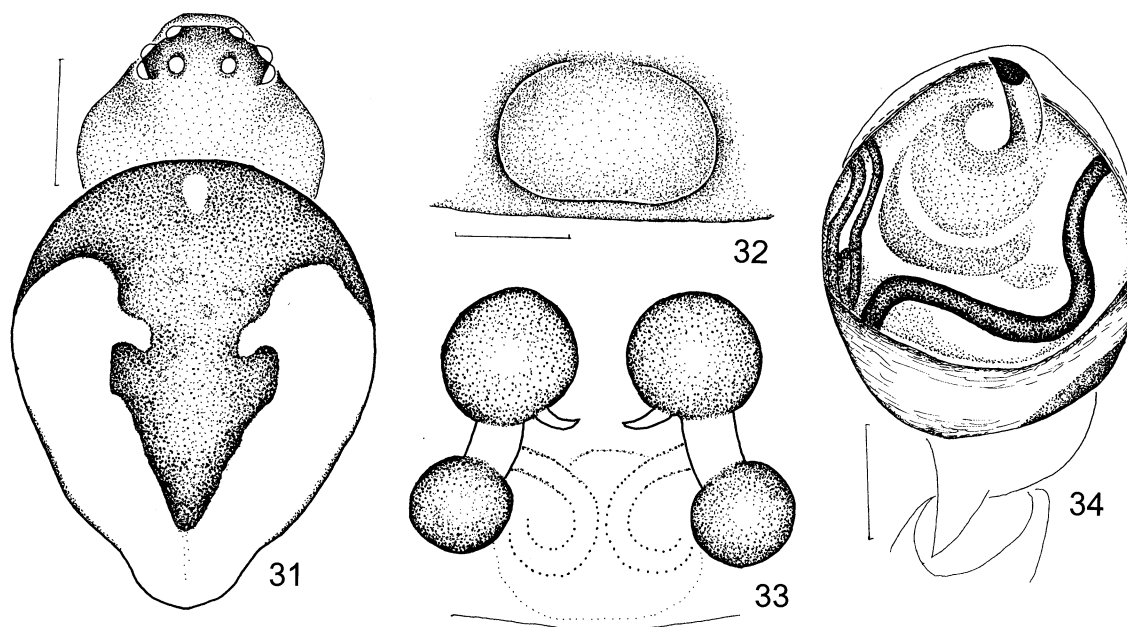
**Distribution.** Japan: Nansei Islands (Yoron Is., Izena Is., Okinawa Is. and Iriomote Is.). Widely distributed in the tropical area of Asia and America.

**Acknowledgments**

I wish to express my sincere thanks to Dr. Tsutomu Hikida, Kyoto University, Kyoto, Prof. Nobuo Tsurusaki, Tottori University, Tottori, and Dr. Hirotsugu Ono, National Science Museum, Tokyo, for their kind advice and to Dr. Akio Tanikawa, Kanagawa, for offering many specimens used in this paper. My thanks are also due to Ms. Mayumi Matsuda, Hokkaido, Mr. Yoh Ihara, Hiroshima, Mr. Koich Nojima, Osaka, Mr. Kiyoto Ogata, Aichi, Prof. Yoshiaki Nishikawa and Prof. Takahide Kamura, Otemon Gakuin University, Osaka, Prof. Hozumi Tanaka, Sonoda Gakuen Women's Junior College, Hyogo, and Mr. Nobuki Yasuda, Hokkaido, for offering or loaning the specimens.

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**Figs. 31–34.** *Emertonella taczanowskii* (Keyserling 1886), ♀ from Okinawa Is., and ♂ from Izena Is., Okinawa Pref.—31, female carapace and abdomen, dorsal view; 32, epigynum, ventral view; 33, female internal genitalia, dorsal view; 34, male left palpus, ventral view. Scales: 0.5 mm (31) and 0.1 mm (32–34).

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# Acta Arachnologica Vol. 51, No. 1 掲載論文の和文要旨

## アシナガグモの生活史 (pp. 1-4)

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野外調査と飼育によって、アシナガグモ (*Tetragnatha praedonia*) の生活史を調べた。野外では、新たに孵化したと思われる子グモが、6月から9月の間に繰り返し出現した。出のう直後から育てられた10頭のうち、5頭 (オス2頭とメス3頭) が成体となった。出のうから最終脱皮までの期間は、オスでは57-59日、メスでは47-51日であった。新たに孵化した子グモの度重なる出現と短い生活史は、アシナガグモが年2-3世代の回転率をもつことを示唆している。

## アカクモヒメバチによるサツマノミダマシへの寄生の初記録【短報】 (pp. 5-6)

榎元敏也<sup>1</sup>, 清水 勇<sup>1</sup>, 小西和彦<sup>2</sup> (<sup>1</sup>〒522-2113 大津市上田上平野町字大塚 509-3 京都大学生態学研究センター; <sup>2</sup>〒062-8555 札幌市豊平区羊ヶ丘 1 独立行政法人 農業技術研究機構 北海道農業研究センター虫害研究室)

アカクモヒメバチ *Eriostethus rufus* (Uchida, 1932) は従来 *Araneus* 属のクモに寄生するとされていた。しかし、我々はこのハチが別属である *Neoscona* 属のクモに寄生することを発見した。アカクモヒメバチとその宿主であるクモとの関係は再検討する必要がある。

## 日本産ミジングモ亜科 (クモ目: ヒメグモ科) の属および種の検討 (pp. 7-18)

吉田 哉 (〒990-2484 山形市竈田 2 丁目 7 番 16 号)

日本産のミジングモ亜科 *Hadrotarsinae* Thorell 1881 の属および種の検討をおこなった。この亜科の特徴は、雌の受精のうが2対で雌の触肢の爪が背腹方向に扁平、第1歩脚跗節腹面に特化した毛があることおよび糸疣前疣の中央に洗濯板状の突出部があることである。

すべての種に検討を加え、属の検索表を表し、日本から6属19種を記録した。このうち、ヤギヌマミジングモ属 (新称) *Yaginumena* を新属として記載し、ツツミジングモ属 (新称) *Trigonobothrys* Simon 1889 およびシロカネヒラタヒメグモ属 (新称) *Emertonella* Bryant 1949 を属として復活した。さらに、アイチミジングモ属 (新称) *Lasaeola* Simon 1881 に属する種を日本より記録した。これらの属に属する12種、ボカシミジングモ *Yaginumena castrata* (Bösenberg & Strand 1906)、コアカクロミジングモ *Y. mutilata* (Bösenberg & Strand 1906)、マダラミジングモ *Y. maculosa* (Yoshida & Ono 2000)、オキナワミジングモ *Lasaeola okinawana* (Yoshida & Ono 2000)、ヨシダミジングモ *L. yoshidai* (Ono 1991)、ヨナミジングモ *L. yona* (Yoshida & Ono 2000)、ヤマトミジングモ *Trigonobothrys japonicus* (Yoshida 1985)、アマミミジングモ *T. amamiensis*

(Yoshida 1985)、ホシミジングモ *T. martinae* (Roberts 1983)、キベリミジングモ *T. flavomarginatus* (Bösenberg & Strand 1906)、カニミジングモ *T. mustelinus* (Simon 1889) およびクロホシミジングモ *T. nigromaculatus* (Yoshida 1987) はミジングモ属 *Dipoena* Thorell 1869 より、さらに1種、シロカネヒラタヒメグモ属 *Emertonella taczanowskii* (Keyserling 1886) はヒラタヒメグモ属 *Euryopsis* Menge 1868 より新たに属を移動した。また、タニカワミジングモ (新称) *Dipoena nipponica* を新種として記載した。さらに、中国で記載された *Dipoena immaculata* Zhu 1998 をキベリミジングモ *T. flavomarginatus* の、また北アメリカ産の種をタイプ種とする属 *Pselothorax* Chamberlin 1948 をアイチミジングモ属 *Lasaeola* の新参異名とした。フタホシヒラタヒメグモ *Euryopsis iharai* Yoshida 1992 は所属が不明確のため本稿では除外した。

## 近畿地方でナス属を食害するナミハダニ属 (ハダニ科) の1新種 (pp. 19-22)

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大阪・京都両市の市街地でナス属 (*Solanum*) の3種の植物 (イヌホオズキ、ワルナスビおよびナス) に多発していたハダニを新種と認め、*Tetranychus takafujii* (ミツユビナミハダニ、新称) と命名・記載した (ホロタイプは大阪市福島区淀川河川公園のイヌホオズキから採集した♂)。本種は、国外の *T. evansi* Baker & Pritchard に最もよく似ているが、♂の第II脚の爪間体の形態で異なる。挿入器は国外産の *T. marianae* McGregor のそれにも似るが、♀♂の脚の形態で相違する。脚の毛の配列は日本のアシノワハダニにも類似するが、挿入器の形態で識別できる。このハダニは、日本国内でナス属の主な害虫の一つになる可能性を持っていると思われる。

## 中国のアシダカグモ科 2. 長春コレクションに含まれる種

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アシダカグモ科の2新種: *Sinopoda angulata* と *S. fasciculata* を記載した。 *Pseudopoda* sp. cf. *exiguoides* と *Pseudopoda* 属の種名未決定種をそれぞれを湖南省と四川省から記録した。アシダカグモ *Heteropoda venatoria* を広東省と雲南省から記録した。ツユグモ *Micrommata virescens* を吉林省から初めて記録した。 *Olios tiantongensis* を同種とみられる2雄をそれぞれ江蘇省と湖南省から記録した。 *O. menghaiensis* を同種とみられる1♀を雲南省から記録した。 *Eusparassus sanguinifrons* Simon 1906 の雌を初めて記載し、 *Olios* へ転属した。全種の生殖器を図示した。(和訳: 編集委員会)